



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
WASHINGTON, D.C. 20555-0001

April 14, 2014

Site Vice President
Entergy Nuclear Operations, Inc.
James A. FitzPatrick Nuclear Power Plant
P.O. Box 110
Lycoming, NY 13093

**SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - ISSUANCE OF
AMENDMENT RE: REVISION TO THE DEFINITION OF SHUT DOWN
MARGIN, BY ADOPTING THE NUCLEAR REGULATORY COMMISSION
APPROVED TECHNICAL SPECIFICATION TASK FORCE STANDARD
TECHNICAL SPECIFICATION CHANGE TRAVELER TSTF-535
(TAC NO. MF2325)**

Dear Mr. Coyle:

The Commission has issued the enclosed Amendment No. 305, to Renewed Facility Operating License No. DPR-59, for the James A. FitzPatrick Nuclear Power Plant. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated June 7, 2013.

The amendment would adopt the U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications Change Traveler TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs," (Agencywide Documents Access and Management System Accession No. ML112200436) dated August 8, 2011; and would apply TSTF-535, to modify the TS definition of "Shutdown Margin" (SDM).

The change would require the calculation of the SDM at a reactor moderator temperature of 68 °F or higher, to a temperature that represents the most reactive state of the core throughout the reactor operating cycle. This change is needed to address new Boiling Water Reactor fuel designs which may be more reactive at shutdown temperatures above 68 °F.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink, reading "Mohan C. Thadani". The signature is fluid and cursive, with the first name "Mohan" and last name "Thadani" clearly distinguishable.

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

Enclosures:

1. Amendment No. 305 to DPR-59
2. Safety Evaluation

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENTERGY NUCLEAR FITZPATRICK, LLC
AND ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-333

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 305
Renewed Facility Operating License No. DPR-59

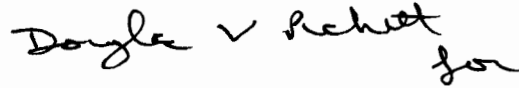
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated June 7, 2013 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-59 is hereby amended to read as follows:

2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 305, are hereby incorporated into the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Douglas V. Beasley for".

Benjamin G. Beasley, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Renewed Facility Operating
License and Technical Specifications

Date of Issuance: April 14, 2014

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 305 RENEWED FACILITY OPERATING LICENSE NO. DPR-59

DOCKET NO. 50-333

Replace the following page of the License with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Page

Page 3

Insert Page

Page 3

Replace the following page of the Appendix A Technical Specification with the attached revised page. The revised page is identified by amendment number and contain marginal lines indicating the areas of change.

Remove Page

1.1-5

Insert Page

1.1-5

- (4) ENO pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use, at any time, any byproduct, source and special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration; or associated with radioactive apparatus, components or tools..
 - (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:
- (1) Maximum Power Level

ENO is authorized to operate the facility at steady state reactor core power levels not in excess of 2536 megawatts (thermal).
 - (2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No.305, are hereby incorporated in the renewed operating license. The licensee shall operate the facility in accordance with the Technical Specifications.
 - (3) Fire Protection

ENO shall implement and maintain in effect all provisions of the approved fire protections program as described in the Final Safety Analysis Report for the facility and as approved in the SER dated November 20, 1972; the SER Supplement No. 1 dated February 1, 1973; the SER Supplement No. 2 dated October 4, 1974; the SER dated August 1, 1979; the SER Supplement dated October 3, 1980; the SER Supplement dated February 13, 1981; the NRC Letter dated February 24, 1981; Technical Specification Amendments 34 (dated January 31, 1978), 80 (dated May 22, 1984), 134 (dated July 19, 1989), 135 (dated September 5, 1989), 142 (dated October 23, 1989), 164 (dated August 10, 1990), 176 (dated January 16, 1992), 177 (dated February 10, 1992), 186 (dated February 19, 1993), 190 (dated June 29, 1993), 191 (dated July 7, 1993), 206 (dated February 28, 1994) and 214 (dated June 27, 1994); and NRC Exemptions and associated safety evaluations dated April 26, 1983, July 1, 1983, January 11, 1985, April 30, 1986, September 15, 1986 and September 10, 1992 subject to the following provision:

1.1 Definitions (continued)

RATED THERMAL POWER	RTP shall be a total reactor core heat transfer (RTP) rate to the reactor coolant of 2536 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and methodology for verification have been previously reviewed and approved by the NRC.
SHUTDOWN MARGIN (SDM)	<p>SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical throughout the operating cycle assuming that:</p> <ul style="list-style-type: none">a. The reactor is xenon free;b. The moderator temperature is $\geq 68^{\circ}\text{F}$, corresponding to the most reactive state; andc. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during n Surveillance Frequency intervals, where n is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

(continued)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 305

TO RENEWED FACILITY OPERATING LICENSE NO. DPR-59

ENTERGY NUCLEAR OPERATIONS, INC.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

DOCKET NO. 50-333

1.0 INTRODUCTION

By letter dated June 7, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML13171A008), Entergy Nuclear Operations, Inc. (Entergy, the licensee) proposed changes to the Technical Specifications (TSs) for James A. FitzPatrick Nuclear Power Plant (JAF). Specifically, the licensee requested to adopt U.S. Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Standard Technical Specifications (STS) Change Traveler TSTF-535, "Revise Shutdown Margin Definition to Address Advanced Fuel Designs" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML112200436); dated August 8, 2011; and to apply the TSTF-535 to revise the TS definition of shutdown margin (SDM). The revised definition of SDM will be used to calculate SDM at the reactor moderator temperature corresponding to the most reactive state of the core throughout the operating cycle (68 °F or higher). The purpose of this change is to address newer boiling water reactor (BWR) fuel designs, which may be more reactive at shutdown temperatures above 68 °F.

The licensee stated that the license amendment request is consistent with the NRC-approved TSTF-535. The availability of this TS improvement was announced in the *Federal Register* (FR) on February 26, 2013 (78 FR 13100), as part of the consolidated line item improvement program.

2.0 REGULATORY EVALUATION

2.1 Background

In water-moderated reactors, water is used to slow down, or moderate, high energy fast neutrons to low energy thermal neutrons through multiple scattering interactions. The low energy thermal neutrons are much more likely to cause fission when absorbed by the fuel. However, not all of the thermal neutrons are absorbed by the fuel; a portion of them are instead absorbed by the water moderator. The amount of moderator and fuel that is present in the core heavily influences the fractions of thermal neutrons that are absorbed in each.

Water-moderated reactors are designed such that they tend to operate in what is known as an under-moderated condition. In this condition, the ratio of the moderator-to-fuel in the core is small enough that the overall effectiveness of water as a moderator decreases with increasing temperature; fewer neutrons are absorbed in the moderator due to the decrease in its density, but this is overshadowed by the reduction in the number of neutrons that moderate from high fission energy to the lower energy level needed to cause fission. The result is a decrease in power and temperature: a negative reactivity feedback effect where the reactor becomes self-regulating. However, if the amount of moderator becomes too large with respect to the amount of fuel, the reactor can enter an over-moderated condition. In this condition, the overall effectiveness of water as a moderator increases with increasing temperature; the reduction in the number of neutrons absorbed in the moderator outweighs the loss in neutrons reaching lower energies. This causes an increase in power that leads to a further increase in temperature creating a potentially dangerous positive reactivity feedback cycle.

As practical examples in support of the proposed changes to the definition of SDM, TSTF-535 discussed SDM with regards to GE14 and GNF2 fuels [GNF-Global Nuclear Fuel]. TSTF-535 indicated that for historical fuel products through GE14, the maximum reactivity condition for SDM always occurred at a moderator temperature of 68 °F because these fuel products were designed so that the core is always under-moderated when all control rods are inserted, except for the single most reactive rod. In cores with GNF2 fuel, TSTF-535 stated that "it is expected that the maximum reactivity condition at beginning-of-cycle [BOC] will remain at 68 °F," but that later in the cycle the most limiting SDM may occur at a temperature greater than this, indicating that with this fuel design the core could potentially achieve an over-moderated condition.

2.2 Regulatory Requirement

Title 10 of the Code of Federal Regulations (10 CFR), Part 50, Appendix A, General Design Criterion (GDC) 26, "Reactivity control system redundancy and capability," and GDC 27, "Combined reactivity control systems capability," respectively require that reactivity within the core be controllable to ensure subcriticality is achievable and maintainable under cold conditions, with appropriate margin for stuck control rod; and that reactivity within the core be controllable to assure that under postulated accident conditions and with appropriate margin for stuck control rods, the capability to cool the core is maintained.

Among other things, 10 CFR 50.36(c)(2)(ii) requires the establishment of a limiting condition for operation (LCO) for a process variable, design feature, or operating restriction that is an initial condition of a design-basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The TS definition of SDM and the LCOs placed on SDM serve, in part, to satisfy GDCs 26 and 27 by ensuring that there is always sufficient negative reactivity worth available to offset the positive reactivity worth of changes in moderator and fuel temperature, the decay of fission product poisons, the failure of a control rod to insert, and reactivity insertion accidents. Given this margin, the core can be held subcritical for conditions of normal operation, including anticipated operational occurrences.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Evaluation

Regarding compliance with the GDCs discussed above, the licensee's request provides the following plant specific information:

The Traveler and model Safety Evaluation discuss the applicable regulatory requirements and guidance, including the 10 CFR 50, Appendix A, General Design Criteria (GDC). JAF was not licensed to the 10 CFR 50, Appendix A, GDC. However, with respect to the proposed change to the definition of SDM, the JAF Updated Final Safety Analysis Report (UFSAR) Section 16.6.2 and Table 16.6-3 describe conformance to the GDC 26 and GDC 27.

JAF's Reactor Protection and Reactivity Control Systems provide assurance that the reactor core can be made and held subcritical during normal operation and during normal anticipated operational transients, by at least two reactivity control systems, and that malfunction of a reactivity control system will not result in unacceptable damage to the fuel, or disrupt the core to the point of preventing core standby cooling when needed.

The two systems, consisting of moveable control rods (UFSAR subsection 3.4) and recirculation flow control (UFSAR subsection 7.9), in conjunction with the standby liquid control system (UFSAR subsection 3.9), are provided to meet the intent of these GDCs. Operational control of reactivity is provided by a combination of:

- Movable control rods and their control;
- Reactor coolant recirculation flow control; and
- Nuclear design (including the burnable poison Gadolinium) that assures that sufficient negative reactivity compensation is always available to make the reactor subcritical from its most reactive condition including compensation for positive and negative reactivity changes from nuclear reactivity coefficients, fuel depletion, and fission products transients and buildup; even with the most reactive control rod fully withdrawn.

The licensee states that, "Entergy Nuclear Operations, Inc. (Entergy) has reviewed the model safety evaluation dated February 19, 2013, as part of the *Federal Register* Notice of Availability. This review included a review of the NRC staff's evaluation, as well as the information provided in TSTF-535. Entergy has concluded that the justifications presented in the TSTF-535 proposal and the model safety evaluation prepared by the NRC staff are applicable to the James A. FitzPatrick Nuclear Power Plant (JAF) and justify this amendment for the incorporation of the changes to the JAF Technical Specifications (TS)."

The licensee's adoption of TSTF-535 for JAF proposes to revise the TS definition of SDM to require calculation of SDM at the reactor moderator temperature corresponding to the most reactive state throughout the operating cycle (68 °F or higher).

The current definition of SDM in Section 1.1, "Definitions," in the TS is:

SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that:

- a. The reactor is xenon free
- b. The moderator temperature is 68 °F, and
- c. All control rods are fully inserted except for the single control rod of the highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

The licensee proposes the following changes (shown in bold) to the definition of SDM in accordance with TSTF-535:

SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical **throughout the operating cycle** assuming that:

- a. The reactor is xenon free
- b. The moderator temperature is $\geq 68^{\circ}\text{F}$, **corresponding to the most reactive state**; and
- c. All control rods are fully inserted except for the single control rod of the highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

3.2 Background

In BWR plants, the control rods are used to hold the reactor core subcritical under cold conditions. The control rod negative reactivity worth must be sufficient to ensure the core is subcritical by SDM. It has the additional amount of negative reactivity worth needed to maintain the core subcritical by offsetting the positive reactivity worth that can occur during the operating cycle due to changes in moderator and fuel temperature, the decay of fission product poisons, the failure of a control rod to insert, and reactivity insertion accidents. Specifically, Section 1.1, "Definitions," of the STS defines SDM as the amount of reactivity by which the reactor is

subcritical or would be subcritical assuming that the reactor is (1) xenon free, (2) the moderator is 68 °F, and (3) all control rods are fully inserted except for the rod of highest reactivity worth, that is assumed to be fully withdrawn.

The three criteria provided in the definition help exemplify what has traditionally been the most reactive design condition for a reactor core. Xenon is a neutron poison produced by fission product decay and its presence in the core adds negative reactivity worth. Assuming the core is xenon free removes a positive reactivity offset and is representative of fresh fuel at the BOC. The minimum temperature the reactor moderator is anticipated to experience is 68 °F, making it the point at which the moderator will be at its densest and therefore capable of providing the highest positive reactivity worth. By assuming the highest worth rod is fully withdrawn, the core can be designed with adequate shutdown margin to ensure it remains safely shutdown even in the event of a stuck control rod, as required by GDCs 26 and 27.

Determination of the SDM under the aforementioned conditions yields a conservative result that, along with the requirements set forth in Section 3.1.1 of the TS, helps ensure:

- a. the reactor can be made subcritical from all operating conditions and transients and design basis events,
- b. the reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and
- c. the reactor will be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition,

3.3 Evaluation of Proposed Revised Definition of Shutdown Margin

The specified moderator temperature of 68 °F facilitates the maximum reactivity condition only if the core exists in an under-moderated condition. In addition to burnable poisons, many modern fuel designs also incorporate partial length rods for increased neutron economy which are employed in order to extend the operating cycle. Both of these affect the ratio of moderator to fuel. The strong local absorption effects of the burnable poisons in fresh fuel make the core under-moderated. As burnable poisons are depleted during the fuel cycle, the core becomes less under-moderated, potentially leading to a slightly over-moderated condition wherein the core will be more reactive at a moderator temperature higher than the 68 °F specified in the SDM definition. Thus, the maximum core reactivity condition and the most limiting SDM may occur later in the fuel cycle at a temperature greater than 68 °F. Consequently, calculation of the SDM at the currently defined moderator temperature of 68 °F may not accurately provide the required available margin.

TSTF-535 therefore proposed a change to the definition of SDM to enable calculation of the SDM at a reactor moderator temperature of 68 °F or a higher temperature, corresponding to the most reactive state throughout the operating cycle. SDM would be calculated using the appropriate limiting conditions for all fuel types at any time in core life.

In support of the proposed change, TSTF-535 cited the requirements for SDM as specified in Topical Report NEDO-24011-A, Revision 18, "General Electric Standard Application for Reactor Fuel (GESTAR II)," dated April 2011 (ADAMS Package Accession Number ML111120038).

Section 3.2.4.1 of GESTAR II states:

The core must be capable of being made subcritical, with margin, in the most reactive condition throughout the operating cycle with the most reactive control rod fully withdrawn and all other rods fully inserted.

The Traveler also cited SRP Section 4.3, which states the following concerning the review of control systems and SDM:

The adequacy of the control systems to assure that the reactor can be returned to and maintained in the cold shutdown condition at any time during operation. The applicant shall discuss shutdown margins (SDM). Shutdown margins need to be demonstrated by the applicant throughout the fuel cycle.

Although the licensing basis requirements for SDM in GESTAR II are only applicable for cores licensed with the Global Nuclear Fuels methods, they are consistent with the review procedures set forth in the SRP, and ensure compliance with GDCs 26 and 27. TSTF-535 stated that while the SRP does not prescribe the temperature at which the minimum SDM should be determined, the requirement of shutting down the reactor and maintaining it in a shutdown condition "at any time during operation" suggests that considering a range of thermal and exposure conditions would be appropriate in the determination of the minimum SDM. Because newer fuel designs employ elements such as partial length rods and burnable absorbers, which may cause the maximum core reactivity conditions and the most limiting SDM to occur later in the fuel cycle at a temperature greater than 68 °F, the NRC staff agrees with the TSTF-535 assessment in this regard. Additionally, the NRC staff concludes that allowing calculation of the SDM at the most limiting core reactivity condition is prudent with respect to ensuring compliance with GDCs 26 and 27 or their plant-specific equivalent. Therefore, the NRC staff concludes that the proposed changes to the JAF TSs are acceptable.

The impetus for TSTF-535 was to provide for a more broadly applicable SDM definition in recognition of the characteristics of the modern fuel designs, for which the core may not be in its most reactive condition at 68 °F. The proposed changes will require the licensee to consider all temperatures equal to or exceeding 68 °F, and all times in the operating cycle. This places an additional responsibility on the licensee to conservatively consider the most limiting time-in-cycle and temperature, a change that will ensure that the licensee maintains adequate SDM as required by its current licensing basis. The NRC staff also concludes that the revised definition is consistent with the 10 CFR 50.36 requirements pertaining to LCOs, because it ensures that the LCOs for SDM consider a broadly conservative range of potential initial conditions in the anticipated operational occurrence analyses. The NRC staff concludes that licensee's evaluation for broad application of the revised SDM definition will support the cores with modern fuel designs.

Therefore, the NRC staff concludes that the proposed changes to the definition of SDM provide a basis for adequate SDM during the most reactive phase of modern fuels, and the revised TS definition of SDM is acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (78 FR 70592). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: R. Grover

Date: April 14, 2014

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly *Federal Register* notice.

Sincerely,

/RA/

Mohan C. Thadani, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-333

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2. Safety Evaluation

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***Memo at ML14030A576**

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